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Nishimura

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[54] MAGNETOOPTICAL RECORDING MEDIUM
AND METHOD FOR REPRODUCING
INFORMATION FROM A
MAGNETOOPTICAL RECORDING MEDIUM
HAVING THREE LAYERS

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Related U.S. Application Data

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[30] Foreign Application Priority Data

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369/275.2, 283, 284, 110, 112; 360/59,
114; 428/694 ML, 694 DE, 694 RL, 694 MM,
694 EC, 694 GR, 694 RE

[56] References Cited

U.S. PATENT DOCUMENTS

5,241,520 8/1993 Ohta et al. 369/13
5,278,810 1/1994 [Takashi et al.] 369/13
5,325,344 6/1994 [Ohta et al.] 369/13
5,428,585 6/1995 Hirokane et al. 369/13
5,477,528 12/1995 [Murakami] 369/275.3
5,486,395 1/1996 [Murakami et al.] 369/13 X
5,616,428 4/1997 Nishimura et al. 428/694 ML

Takahashi et al.

Murakami et al.

FOREIGN PATENT DOCUMENTS

0524745 [2] 1993 European Pat. Off. .

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Scinto

[57] **ABSTRACT**

A magneto-optical recording medium has a first magnetic layer which is an in-plane magnetization film at both room temperature and high temperatures and changed to a perpendicular magnetization film at intermediate temperatures, and a second magnetic layer which is composed of a perpendicular magnetization film. The recording medium enables realization of high S/N reproduction of information recorded at a pitch below the diffraction limit of light with a simple structure, and further improvement in linear recording density and track density.

2 Claims, 14 Drawing Sheets



